

Meeting Minutes:

Recorded by: Allie Phillips and Mike Elliott

NOTE: Copies of the meeting minutes and presentation slides are available on the MassDEP C&D Subcommittee webpage. The MassDEP C&D Subcommittee webpage can be found at the following URL: <http://www.mass.gov/eea/agencies/massdep/news/advisory-committees/cd-subcommittee.html>. Comments can be submitted via email to Mike Elliott at michael.elliott@state.ma.us.

The following agenda items were covered during the meeting:

1) Welcome/Introductions

- a) MassDEP welcomed participants in the room and on the webinar.
 - i) Participants in conference room: 12 (as recorded on meeting sign-in sheets)
 - ii) Participants on webinar: 8 (as recorded on webinar attendee report)
 - iii) Participants reflected a cross-section of stakeholders representing: C&D Processors and Transfer Stations; Waste Haulers; Recycling Processors; Biomass Energy Recovery; Consultants; Construction Contractors; State Officials; Industry/Trade Associations

2) C&D Action Plan Development

MassDEP reminded participants that this month's meeting is the second in a series of three C&D Subcommittee meetings scheduled this year to further refine the specific targets and objectives of the C&D Action Plan. This month, we focused on two themes: 1, expanding existing/new wood markets; and 2. improving recovery rates at C&D Handling facilities. Ultimately, the C&D Action Plan will be incorporated into the next 10-year Solid Waste Master Plan (SWMP) for 2020 to 2030, which establishes high level policy goals, objectives and strategies to guide the MassDEP-BAW Solid Waste program. MassDEP expects to compile a draft of the SWMP, including the C&D Action Plan, for public comment in 2019. After completing the public comment process, the final version of the SWMP will be issued in 2020.

The following is a synopsis of the discussion generated around each of these themes:

Expand existing/new wood markets:

- MassDEP delivered a wood market analysis consisting of the following points:
 - The "2016 Construction and Demolition Debris Market Study" (DSM 2017) reported that there remains approximately 22% "A-wood" in the waste residuals from C&D processors. This suggests that more A-wood can be recovered if more effort or more advanced technologies were applied.
 - Pie chart of CY2017 wood market materials produced showed quantities of wood products going to various end markets.
 - Facility rankings for specific products; provided separate tables for each of the following materials: source-separated wood, particle board material, biomass fuel, and BUD-residual materials.
 - These slides generated comments in the room and on the webinar about market demand and capacity. Comments included the following:

- (a) Tafisa's wood buyer confirmed that Tafisa has more capacity for A-Wood, but transportation is the limiting factor at present. Tafisa is working to overcome that limitation.
- (b) One commenter suggested a lot of wood (painted, pressure treated) is going out as BUD-residuals because it is not suitable for any other end market
- (c) Another commenter suggested that Kruger (biomass boiler in Quebec) acceptance of B-wood is at capacity
- (d) MassDEP reported that MB Bark (Poland, ME) can take creosote treated wood (CTW; e.g. railroad ties)
- (e) Mr. Wilcox (PlexusRT) suggested Biochar Now (Colorado) might be an option for pressure treated wood.
- (f) Mr. Bernadin (3R MCDG) reported that JR Brisebois, a biomass cogen facility (Valleyfield, QC), will come on-line in 24 months with capacity for 80,000 tonnes per year treated wood as fuel (both CTW and pentachlorophenol treated wood)
- (g) One of the C&D Processors asked whether MassDEP intends to enforce waste bans on painted wood and pressure treated wood, since in his estimation, there are no markets for recycling. MassDEP is cognizant of the contracting markets for painted/treated wood in recent years. Accordingly, MassDEP will carefully evaluate the breadth and scope of the waste ban on wood, but until formally amended, wood remains a waste ban item and the C&D processors must remove it from the mixed C&D waste stream to the greatest extent possible. Toward that end, MassDEP will continue to encourage all options to achieve compliance with the waste bans for these materials. There are still options for painted/treated wood as fuel for biomass boilers in surrounding states and the Province of Quebec. And if that proves infeasible, then there is the option to dispose of the material in Massachusetts at an MSW Waste-to-Energy combustion facility. As a last resort, if no biomass market or combustion capacity is available, then a facility can request a waiver of the waste ban on a case-by-case basis.

Improve recovery rates at existing C&D Handling Facilities:

- MassDEP described a policy that it is contemplating to require minimum performance standards for diversion at C&D Handling Facilities (both Processors and Transfer Stations)
- In recent months, site inspections by SERO staff have determined that C&D handling facilities are not properly classifying inbound waste loads; e.g. failure to properly distinguish between C&D waste, C&D Residuals and Bulky/DTM.
- In an effort to ensure C&D waste is properly processed, and that banned materials are diverted from disposal to the greatest extent possible, MassDEP has started imposing minimum performance standards on C&D handling facilities when an ATO permit comes up for renewal.
- Initially, MassDEP is proposing to set the minimum performance standard at 15% diversion. Over time, this will be increased to achieve incrementally better performance.
- In the minimum performance standard requirement that MassDEP is contemplating, the diversion rate will be based on the total quantity of inbound materials received by a facility less C&D residuals. Note:

- C&D residuals, which are allowed to be deducted from the inbound materials quantity, can only be generated by a permitted C&D handling facility that already meets the minimum diversion rate;
- Bulky/DTM will be included in the quantity of inbound materials received; and
- BUD residuals used for ADC or roadbase stabilization will not count toward diversion.
- Any C&D waste residuals from a C&D handling facility that does not meet the minimum performance standard will have to be transferred to a compliant C&D handling facility for further processing.
- Most C&D processors in Massachusetts are already achieving this minimum diversion rate. By contrast, most C&D transfer stations or facilities that rely on kick-sorting, likely don't meet the standard
- The recycling rate is a separate calculation based on inbound mixed C&D waste only, not the total inbound materials received. MassDEP will continue to track the recycling rate for comparison, but facility compliance with the minimum performance standard will be based on the diversion rate.
- On a related subject, there was some discussion of the benefits of facility certification through the Recycling Certification institute (<https://www.recyclingcertification.org/>). This is a service introduced at our last meeting by Bill Turley of CDRA. We learned that ReEnergy of Roxbury (RRX) will soon become the first C&D Processor in Massachusetts to earn RCI certification. This involves a rigorous evaluation by an independent third-party certifier. The RRX team shared with us some of the reasons why they pursued this certification at this time:
 - Ensures quality and reliability of performance data, helps people tracking credits on LEED projects; having the certification differentiates ReEnergy from its competitors with customers.

3) Technology Showcase: Zen Robotics (Plexus Recycling Technologies)

- Will Hancock of Plexus RT delivered a highly informative presentation on the capabilities of Zen Robotics technology to sort wood at C&D Processors. Will highlighted a C&D processor in Austin, TX where the technology has been installed. A complete copy of Mr. Hancock's slide presentation is available on the MassDEP C&D Subcommittee website under the meeting materials for this meeting in the "Archives" link. Alternatively, interested parties can contact Mr. Hancock directly at w.hancock@plexusrt.com or by phone at 720-459-1988.
- Cost: a two-arm system with a single sensor box runs about \$970K installed. But another option is to lease the system for \$2500/month which includes replacement parts and technology upgrades.
- Throughput: a two-arm system can process 10 tons/hour (4000 picks/hour); and a three-arm system can process 16 tons/hour.
- Limitations (e.g. dust, humidity, etc.)? Cameras face down, so no dust collects on them. Sensor cleaning frequency is dependent on the building and how dirty it is. Natural light is an issue but it is easily managed with curtains.
- What happens when only one side of wood is painted? If the sensor can't see the paint, then you can add a QC person, or implement a waterfall so the wood can change position/flip over and the next sensor/arm can see it.

4) CDRA Update (Bill Turley)

Construction & Demolition Recycling Association Updates: Bill Turley, Executive Director of CDRA, provided the following updates:

- Outside experts have completed two documents characterizing C&D Fines nation-wide; one document is highly technical, and the other is a high level summary.
- CDRA recently completed a gypsum recycling protocol that is currently undergoing internal member review.
- On the subject of Non-Hazardous Secondary Material (NHSM) exemptions, CDRA has been asked to consider developing exemption letters for other materials; e.g., recycled asphalt shingles, carpet, C&D biomass with plastics for use as fuel. This is a resource-intensive effort. Board has not yet reached a decision whether to proceed.
- CDRA serves on the USGBC Materials and Recycling Technical Advisory Committee. Since source separation does not work in all situations, CDRA is advocating revisions to LEED v4.1 specifications to recognize the various products recovered by certified C&D processors from mixed C&D waste as separate recycled streams equivalent to source separated materials.
- CDRA is planning to conduct a 2-day face-to-face board meeting and strategic planning meeting in Chicago.

5) **MassDEP Updates**

1. C&D Source Separation Pilot Initiative:

- MassDEP provided an update on the C&D Source Separation Pilot Initiative to develop case studies demonstrating that in certain situations source separation at congested urban sites is economically feasible and can achieve higher diversion rates yielding higher value recyclable materials.
- One processor expressed grave concerns that this initiative could undermine the industry.
- The CDRA opined that this initiative is a waste of money, and that MassDEP should put its efforts into finding new end-markets.
- Another meeting participant opined that source separation is not feasible if the end markets are not there. He also expressed concern about logistics, extra hauls, and increased greenhouse gas emissions.
- MassDEP acknowledged that source separation does not work in all situations, but that MassDEP will continue to promote all options to achieve increased re-use and recycling of C&D materials.

2. Promote interagency cooperation with MassDOT:

- MassDEP reported on its recent meeting at MassDOT (4/30) to discuss revising the specification for hot-mix asphalt (HMA) to allow the use of a small fraction of processed recycled asphalt shingle (RAS). MassDOT reiterated why it is disinclined to grant such a request – which basically comes down to reduced performance life of paved surfaces at greater cost to the Commonwealth.
- MassDOT suggested exploring the possibility of using RAS in the base course of reclaimed pavement projects; however, there aren't many such projects.
- MassDOT also expressed willingness to explore creation of a separate specification for lower intensity applications such as secondary roads and other municipal infrastructure. They claimed this has been tried in the past, but the HMA contractors have little incentive to produce it, so it gets very little use.

3. Recycling Business Development Grant Program

SWAC C&D Subcommittee Meeting
MassDEP – Bureau of Air & Waste
June 14, 2018; 10:00 AM to 12:00 PM

- MassDEP reminded participants of the CY2018 RBDG cycle. There will be two rounds of award with application deadlines of 6/29 and 10/05. MassDEP announced that one of the materials targeted for increased re-use and recycling is “C&D Wood - Clean Wood.”
- One individual asked if MassDEP would consider front-loading the reimbursement payments earlier in the project and eliminate the performance based payments if the applicant is taking on a higher investment risk, such as optical sorting technology. In this case, the applicant should highlight this need in their grant application and this can be discussed if the project is selected for award.

6) Closing/Next Steps

1. Scheduled meetings through remainder of CY2018:
 - October 18, 2018

Respectfully,

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